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## No. VII.

## LITHOTOMY FORCEPS.

*The GOLD VULCAN MEDAL was this session awarded to Mr. FRANCIS CLULEY, of Sheffield, surgeons' instrument maker, for his improved Lithotomy Forceps. The following communication was received from him on the subject, and the Forceps has been placed in the Society's repository.*

SIR,

Sheffield, March 15, 1825.

I BEG leave to offer to the notice of the Society of Arts a pair of improved lithotomy forceps. To give the Society an idea of the improvement, it will be needful to make a few observations on the application of such instruments. Among the diseases incidental to mankind none are more distressing in their nature than the stone in the bladder, the extraction of which, under the most favourable circumstances, is attended with considerable risk, and much bodily suffering. The latter is frequently much increased by circumstances which can only be discovered during the operation. Such, for instance, as the size, shape, or number of the stones, as well as their consistency in texture. Therefore the result of the operation often depends on contingencies, and on the facility with which the stone can be extracted. Having been a manufacturer of surgeons' instruments for above twenty years, I have had many opportunities of witnessing the operation of litho-

tomy, and am convinced that the kind of forceps in common use are not calculated to extract the stone in that safe and expeditious manner that is desirable ; the blades of which, being only slightly concave within, and furnished with teeth, render them extremely objectionable ; for the thickness of the blades, added to the diameter of the stone, especially if it is rather a large one, causes such an extension of the forceps that much laceration takes place, and it often compels the operator to apply the knife to enlarge the orifice. The stone also frequently eludes the grasp of the forceps, in consequence of which, when the operator considers he has it fairly within the blades, he applies additional pressure in order to keep hold during the extraction, and thus often defeats his object by the stone breaking in pieces, or by small portions of it breaking off by the action of the teeth, and thus leaving within the bladder such small pieces as may form the nucleus of a second formation of stone. Further, the stone is frequently found in so decomposed a state that it will not bear the least pressure of the forceps.

Having devoted much time and attention to the subject, I have formed an instrument for the purpose, which I consider will obviate the many objections I have stated respecting those now in use. How far I may have succeeded in my endeavours at improvement I must leave to the faculty to determine. The instrument has three blades, and is adapted to extract large and irregular formed stones, also such as may be much decomposed ; for when the stone is within the instrument, no pressure is needful to retain it there, and the blades being hollow, and of a bulbous form, receive the stone within their cavity without

the necessity, in ordinary cases, of any extra extension of them during the extraction of the stone.

Many other advantages might be pointed out that would be derived from this instrument, but I consider it would be taking up, unnecessarily, the valuable time of the Society to enter into further detail; I therefore beg leave to submit the invention to the consideration of the Society, and if they should deem it worthy of an honorary remuneration, it will be a source of gratification to me to find that I have in any way contributed to mitigate the sufferings of my fellow-creatures in such distressing cases.

I am, Sir,

*A. Aikin, Esq.*

&c. &c. &c.

*Secretary, &c. &c.*

**FRAS. CLULEY,**

*Surgeons' Instrument Maker.*

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***Reference to the Engraving of Mr. F. Cluley's Lithotomy  
Forceps.***

**PLATE VIII.** Fig. 1 represents the forceps open, and figure 2 sideways, and almost shut; the two opposite blades are jointed in the usual way, only the stud or axis has a projecting head on which the third arm *a b* is jointed at *c*.—*d* and *e* are two small arms secured to the tail *b* by the screw *i*, but moving freely on the screw; they also move freely on the screws *ff* which attach them to the studs *g g*; these studs are tapped, and screw into the sides at *h h*. Now, when the forceps are opened, the small arms *d* and *e* are drawn nearly into a straight

line, (a stop in the joint prevents their opening quite straight, otherwise they would not close again), which pulls down the tail *b* and elevates the head *a*; then, on closing the forceps, the small arms *d* and *e* elevate the tail *b* at the same time that they depress the head *a*. Thus all the three blades open and shut together.

Fig. 3 shows the third blade, with the stud, collet, and screw, which form the joint, separated: fig. 4 shows the inside of the third blade at *c*, and the screws, screw-studs, and small arms, separate.

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#### No. VIII.

#### INDIAN METHOD OF TWISTING IRON FOR GUN-BARRELS AND SWORD-BLADES.

*The THANKS of the Society were this session voted to Capt. T. M. BAGNOLD, and his brother, Capt. M. E. BAGNOLD, of Bombay, for an account of the process employed at Bombay, of making twisted Gun-barrels and Sword-blades, in imitation of those made at Damascus. Specimens of the Gun-barrels have been placed in the Society's repository.*

7, High-row, Knightsbridge,

DEAR SIR,

March 7, 1825.

HAVING obtained, through the medium of my brother, Capt. Michael Edward Bagnold, of Bombay, the process used in manufacturing gun-barrels and sword-blades at Damascus, with the peculiar method of tempering weapons